W. H. TAYLOR.
MORTISE THUMB BOLT FOR DOORS.
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Fig. 1.

Fig. 2.

Witnesses:
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By:

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MORRIS THUMB-BOLT FOR DOORS.


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To all whom it may concern:

Be it known that I, WARREN H. TAYLOR, a citizen of the United States, and a resident of Stamford, in the county of Fairfield and State of Connecticut, have invented certain new and useful Improvements in Mortise Thumb-Bolts for Doors, of which the following is a specification.

Heretofore considerable difficulty has been experienced from bolts of this class by reason of the fact that the bolt is projected no farther than it is moved by the thumb-knob, so that when the bolt is released from the keeper by withdrawing only a slight distance, as is frequently the case when a door shrinks, the bolt is left in the partially-withdrawn position, and should the door be slammed the bolt is projected in locked position and a lockout occurs, which results in great inconvenience by reason of the fact that the bolt is accessible from the inside of the room only.

The object of my present invention is to overcome this objection by rendering the bolt incapable of being projected as soon as released and a lockout prevented.

I accomplish the object of my invention by combining with a bolt and its oscillatory control arm, which is permanently engaged therewith, certain novel features of construction and arrangement, which will be hereinafter fully described, and pointed out in the claims.

In the accompanying drawings, Figure 1 is a view of a lock embodying the simple construction by which my invention may be carried out, the lock-casing being in section to disclose the parts; and Fig. 2 is a view of a preferred form.

According to Fig. 1 therein, 1 represents the lock-casing, 2 the bolt, and 3 the controlling-arm of the bolt, which is permanently engaged with the bolt and oscillates with the usual hub. 5 represents a retracting-spring which insures the complete withdrawal of the bolt at any time that the arm 3 is moved a sufficient distance to start said bolt. The arm has an end 6, which engages a seat 7, formed on the bolt, so that when the bolt is projected the tendency of the spring 5 to withdraw said bolt is opposed. The bolt also carries a seating-spring 8, which avoids the possibility of the arm 3 being withdrawn by jarring. It will be observed from the construction that the arm must move into engagement with the face 9 of the bolt, the spring 8 being forced upward before the bolt begins to retract, and when in this position there is nothing to oppose the complete retraction of the bolt.

According to the form illustrated in Fig. 2 I employ a spring-pressed lever 10, which through the medium of a swinging plate 11 exerts pressure upon the bolt-actuating arm 3. The lower faces of the swinging plate 11 are formed by two curves or inclines which meet at a point, and the lug on the arm against which these faces bear is also curved, so that it will not be possible for the arm to rest on a dead-center; but the action of the spring will be to force the arm either to the limit of its throw in the locked or retracted position, according to the side of the center upon which the pressure is exerted. The lever 10 may be provided with spring-plungers 12 and 13 to engage lugs 14 and 15 on the opposite ends of the plate 11 to assist in presenting said plate at all times in the proper position to engage the arm 3. When the arm 3 is moved in the direction for throwing the bolt, it will pass 80 along one of the curved faces of the plate 11 until it reaches the center, and then having passed the center the lever 10, which has thus been raised, will be forced down and will automatically push the arm into the fully-locked position as desired. A reversal of these operations will cause a reverse action of the parts, as will be evident.

Having thus described my invention, the following is what I claim as new therein and desire to secure by Letters Patent:

1. In a thumb-bolt, the combination with a bolt and its controlling-arm, a spring device acting upon the bolt and tending to retract the latter when it is projected, and a spring acting upon the arm when the dogging action
of the arm is removed and tending to force the arm into a fully retracted or projected position, substantially as described.

2. In a lock, the combination with a bolt, of a spring-pressed lever, carrying a movable plate, and a bolt-actuating arm against which said plate bears, the bearing-surfaces of the plate and the arm being so constructed that the action of the spring will always tend to force the arm into a fully retracted or projected position, substantially as described.

3. In combination with a bolt and its controlling arm; the herein-described spring-pressed lever and the swinging plate carried by said lever and provided with the spring plungers for holding it in proper relation to the arm, substantially as herein explained.

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 Witnesses:
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